

What is claimed is:

1. A method of automatically performing liquid microextraction analysis on a plurality of samples in separate vials comprising the steps of:
 - controlling movement of a syringe in multiple axes;
 - cleaning the syringe;
 - drawing a carrier liquid into the syringe;
 - moving the syringe to a sample vial;
 - inserting a tip of the syringe into the vial;
 - collecting a portion of the sample in the syringe;
 - withdrawing the syringe from the sample vial;
 - moving the syringe to an instrument injector;
 - injecting the sample into the instrument injector for analysis of the sample; and
 - repeating the prior steps on each of the plurality of samples.
2. The method of claim 1 wherein the step of collecting the sample comprises the steps of:
 - activating a syringe plunger to expel and hold a microdrop of the solvent on the tip of the syringe;
 - holding the microdrop on the tip of the syringe in the sample vial for a period of time to collect the sample; and
 - drawing the microdrop and the collected portion of the sample into the syringe.
3. The method of claim 1 further comprising the step of:
 - placing a plurality of sample vials in a holder in established coordinate positions.
4. The method of claim 1 further comprising the step of:
 - providing a syringe cleaning solution in a known coordinate position.

5. The method of claim 4 wherein the step of cleaning the syringe comprises the steps of:

moving the syringe to the cleaning vial and withdrawing contents of the cleaning solution into the syringe; and

expelling the cleaning solution from the syringe into a waste receptacle.

6. The method of claim 1 wherein the step of inserting the syringe into the sample vial further comprises the step of:

inserting the syringe into the sample vial to position the tip of the syringe in a head space above a liquid sample in the vial.

7. The method of claim 1 wherein the step of inserting the syringe into the sample vial further comprises the step of:

inserting the tip of the syringe into the liquid sample in the sample vial.

8. An apparatus for automatically performing liquid microextraction analysis of a plurality of samples in separate vials, the apparatus comprising:

means for controlling movement of a syringe in multiple axes;

means for cleaning the syringe;

means for drawing a carrier liquid into the syringe;

means for moving the syringe to a sample vial;

means for inserting a tip of the syringe into the vial;

means for collecting a portion of the sample in the syringe;

means for withdrawing the syringe from the sample vial;

means for moving the syringe to an instrument injector;

means for injecting the sample into the instrument injector for analysis of the sample.